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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,601	05/17/2006	Hans Boffo	GRIMM 236-KFM	4759

10037 7590 02/24/2010

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EXAMINER	
HAGEMAN, MARK	

ART UNIT	PAPER NUMBER
3653	

MAIL DATE	DELIVERY MODE
02/24/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/579,601	BOFFO ET AL.	
	Examiner	Art Unit	
	Mark Hageman	3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 January 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,561,545 to Carlow in view of US 6,311,919 to Hermanns et al. and US 5,621,591 to Rahimi et al. and what is well known in the art. Carlow discloses a device for sorting different materials, comprising a conveyor belt (rc) and at least one sensor (cl and ct) which is assigned to the conveyor belt and senses pieces of material in a location-dependent manner on the conveyor belt, and at least one actuator (rsa) which sorts out pieces of material in accordance with signals of the at least one sensor in a location-dependent manner (c9 lines 42+), the improvement comprising at least one electromagnetic actuator (rsa) Carlow does not show the electromagnetic actuator having at least one energizable coil rotatably suspended about a shaft, said coil, starting from a basic position, performing a rotational movement about the shaft in a gap between a pair of first oppositely magnetized permanent magnets to a second position in a gap between a pair of second oppositely magnetized permanent magnets, a magnetic field in the gap of the second permanent magnets extending opposite in direction to a magnetic field in the gap of the first permanent magnets, the rotational movement of the coil effecting an actuating operation for sorting out a piece of material.

3. Hermanns shows an actuator as discussed and described in claim 1 (see figures 1-6) offering the advantages of simplified triggering and control (c3 lines 53+) and generating a high moment (c3 lines 60+). Rahimi also shows an actuator as discussed and described in claim 1 (see figures 7-9) for the purpose of quick and accurate movement with low power consumption (c1 lines 27+).

4. It would have been obvious to one of ordinary skill in the art at the time of the applicants' invention to have modified Carlow to include the type of actuator taught by both Hermanns and Rahimi, and well known in the art, to achieve the advantages discussed above. Furthermore the actuators are being used in a predictable manner to provide actuation. The substitution of one actuator for another for the predictable result of actuation would have been obvious to one of ordinary skill in the art.

5. Regarding claims 5-22 examiner notes that the limitations of these claims appear to recite what is well known and conventional regarding such electro-magnetic actuators. Both Hermanns and Rahimi disclose many of these features and indicate the level of ordinary skill in the art.

Re claim 3 Carlow discloses the at least one electromagnetic actuator is driven in a location-dependent manner so as to pivot an ejector connected to the actuator into the transport path of a respective sensed piece of material for sorting out the piece of material (c9 lines 42+).

Re claim 4 at least one electromagnetic actuator is arranged at the end of the conveyor belt at an outlet side, and wherein the ejector is pivotable into the transport path of the respective sensed piece of material (c9 lines 42+ and figure 2).

Re claims 23-25 see figure 2 and c9 lines 42+.

6. Claims 1, 2, 5-22, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,167,141 to Carrara in view of US 6,311,919 to Hermanns et al. and US 5,621,591 to Rahimi et al. and what is well known in the art. Carrara discloses a device for sorting different materials, comprising a conveyor belt (14) and at least one sensor (1) which is assigned to the conveyor belt and senses pieces of material in a location-dependent manner on the conveyor belt, and at least one actuator (42) which sorts out pieces of material in accordance with signals of the at least one sensor in a location-dependent manner (c4 lines 5+), the improvement comprising at least one electromagnetic actuator (42) Carrara does not show the electromagnetic actuator having at least one energizable coil rotatably suspended about a shaft, said coil, starting from a basic position, performing a rotational movement about the shaft in a gap between a pair of first oppositely magnetized permanent magnets to a second position in a gap between a pair of second oppositely magnetized permanent magnets, a magnetic field in the gap of the second permanent magnets extending opposite in direction to a magnetic field in the gap of the first permanent magnets, the rotational movement of the coil effecting an actuating operation for sorting out a piece of material.

7. Hermanns shows an actuator as discussed and described in claim 1 (see figures 1-6) offering the advantages of simplified triggering and control (c3 lines 53+) and generating a high moment (c3 lines 60+). Rahimi also shows an actuator as discussed and described in claim 1 (see figures 7-9) for the purpose of quick and accurate movement with low power consumption (c1 lines 27+).

8. It would have been obvious to one of ordinary skill in the art at the time of the applicants' invention to have modified Carrara to include the type of actuator taught by both Hermanns and Rahimi, and well known in the art, to achieve the advantages discussed above. Furthermore the actuators are being used in a predictable manner to provide actuation. The substitution of one actuator for another for the predictable result of actuation would have been obvious to one of ordinary skill in the art.

9. Regarding claims 5-22 examiner notes that the limitations of these claims appear to recite what is well known and conventional regarding such electro-magnetic actuators. Both Hermanns and Rahimi disclose many of these features and indicate the level of ordinary skill in the art.

Re claim 2 Carrara discloses the at least one electromagnetic actuator is arranged at a side of the conveyor belt (figure 1).

Re claim 27 Carrara further discloses the parts are made of metal (c1 lines 5+). The other limitations of the claim are apparent in the functioning of the combination proposed relative to claim 1.

Response to Arguments

10. Applicant's arguments filed 1-7-2010 have been fully considered but they are not persuasive. Applicant has argued that the Hermanns and Rahimi references, "have absolutely nothing to do with sorting devices." Examiner acknowledges that the references in question do not teach sorting devices but show that the actuators in question are used in a variety of fields and offer a number of recognized advantages. Examiner maintains that the substitution of the actuators for their predictable functions and result would have been obvious to one of ordinary skill in the art. The actuator is a key element of this type of sorting device (as it is necessary to the sorting action) and thus the use of actuators that are well-known in other fields that offer specific advantages would be obvious to one of ordinary skill in the art. Applicant is reminded that the proposed combination replaces one electro-magnetic actuator with another one to realize well-known advantages.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Hageman whose telephone number is (571) 272-3027. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick Mackey/
Supervisory Patent Examiner, Art Unit 3653

/M. H./
Examiner, Art Unit 3653